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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,444	11/13/2003	Dan W. Youngner	H0005690US (HON0003/US)	8710

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EXAMINER	
TUROCY, DAVID P	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,444	YOUNGNER ET AL.	
	Examiner	Art Unit	
	David Turocy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *14-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-6,8-13 and 21-26* is/are rejected.

7)☐ Claim(s) *7* is/are objected to.

8)☐ Claim(s) *1-26* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4/12/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-13 and 21-26, drawn to a method for vapor depositing plural layers, classified in class 427, subclass 96.2.

   II. Claim 14, drawn to an apparatus for depositing a coating, classified in class 118, subclass 721.

   III. Claim15-20, drawn to coated product, classified in class 428, subclass 357.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to for a materially different process such as air spraying.

3. Inventions I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially

different process such as traversing the covering material source to effectively cover the first material.

4. Inventions II and III are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the product as claimed can be made by another apparatus including an apparatus that traverses the substrate relative to the deposition source.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Daniel Schulte on 7/12/05 a provisional election was made with traverse to prosecute the invention of group I, claims 1-13 and 21-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

9. Claims 6 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6: It appears as though claim 6 includes an improper Markush group. The first occurrence of "and" appears to be incorrect. Appropriate correction is required.

Claim 24 recites the limitation "the enclosure" in line 2. There is insufficient antecedent basis for this limitation in the claim. The reactive material is enclosed by the second material and it appears the enclosure of claim 24 should be limiting to material that encapsulates the first and second materials.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 3, 4, 10, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5641611 by Shieh et al, hereafter Shieh.

Shieh teaches of a method for enclosing a reactive material by a covering material by providing a substrate with a fixed shadow mask within a vacuum chamber having the source materials therein (Figures, Column 4, lines 35-57, Column 1, lines 32-41). Shieh discloses providing a vacuum in the chamber and evaporating the reactive material and covering such that they pass through the shadow mask and deposits a covering material with a larger surface area to completely cover the reactive material (Figures, Column 2, lines 35-39, Column 4, lines 35-57). Shieh discloses rotating the substrate on an axis perpendicular to the surface covering during evaporation and a

covering material that is located at an oblique angle to the axis (Column 6, lines 30-32, Column 2, lines 34-39, Column 6, lines 37-54).

12. Claims 21-23, and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by US Patent Publication 2003/0138656 by Sparks, hereafter Sparks.

Sparks teaches of a method for preparing an electronic device comprising depositing a reactive material and covering the reactive material (Paragraph 0015, 0019). Sparks discloses encapsulating the first and second material and the degrading the second material to expose the first material (Paragraph 0020). Sparks discloses applying a thermal treatment to provide degradation, including heating and laser irradiation treatment (Paragraph 0020).

13. Claims 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6900702 by Younger et al., hereafter Younger.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Younger teaches of a method for forming a microelectronic device comprising applying a first reactive material and subsequently covering the reactive material with a covering material (Column 3, lines 25-36). Younger discloses encapsulating the first and second material, in a laser transparent material, and then degrading the second material to expose the first material (Column 3, lines 25-36). Younger degrades the second material either by laser treatment or by heating in an oven (Column 5, lines 25-45).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 2, 5, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shieh.

Claims 2 and 12: Shieh does not explicitly disclose a covering material is from 0.1 to 10 percent greater then the area of coverage or the angle of incidence is in the range from 1 to 10 degrees.

However, Shieh discloses having a slight angle of incidence from the perpendicular to insure complete coverage of the reactive material (Column 6, lines 51-54). Therefore Shieh discloses the area of coverage and the angle of incidence are result effective variable, where too small a coverage (too small an angle) would result in incomplete coverage of the reactive material and too much coverage (too large an angle) would result in no added benefit of more complete coverage.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the angle of incidence and coverage area used in the process of Shieh, through routine experimentation, to completely cover the reactive material with the desired properties associated with complete coverage of the reactive material.

Claim 5: Shieh discloses providing a distance H between the shadow mask and portion to be coated, but does not explicitly disclose a desired distance. Therefore, one of ordinary skill in the art would be motivated to optimize the distance to provide an

appropriate distance for depositing both the reactive material and covering material in the desired shaped.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the distance between the mask and substrate used in the process of Shieh, through routine experimentation, to provide a effective distance to deposit the reactive and covering material to the desired portions of the substrate.

Claim 11: Shieh discloses rotating the substrate but fails to disclose the speed of rotation. However, It is the examiners position that the process parameters of speed of rotation is a known result effective variable. If speed is too low it would result in too large a coating thickness and too high a speed would result in a coating thickness that is too thin.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the speed of rotation of the substrate used in the process of Shieh, through routine experimentation, to impart the substrate with the desired properties associated with the coating.

17. Claims 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shieh and further in view of US Patent 6013538 by Burrows et al., hereafter Burrows.

Claim 6: Shieh teaches all the limitations of these claims as discussed in the 35 USC 102(b) rejection above, however, Shieh fails to disclose a specific reactive material.

However, Burrows, teaching of a method for covering a reactive material in the similar fashion as taught by Shieh, discloses providing a material comprising lithium (Column 6, lines 3-4). Shieh discloses providing a component comprising lithium with a thickness of 0.5 to 5 microns followed by a subsequent covering material with a thickness of 0.5 to 5 microns (Column 6, lines 10-11, 39-40). Since the component disclosed by Burrows comprises lithium it must necessarily be reactive as evidenced by applicants claim 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shieh to use the deposition materials and thicknesses as suggested by Burrows to provide a desirable organic LED because Burrows discloses providing a composition comprising lithium is known in the art to provide an layer for a organic LED and therefore one would reasonably expect the material to be effective in the OLED as taught by Shieh.

Claim 8-9: In the case where the claimed ranges "overlap or lie" inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05.

18. Claims 24 and 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks in view of US Patent 5929515 by Greiff et al., hereafter Greiff.

Sparks teaches all the limitations of these claims as discussed above in the 35 USC 102(a) rejection above, but fails to disclose a material transparent to laser radiation.

However, Greiff, teaching of a method for forming a similar device, discloses providing a chamber comprising a wall that is transparent to laser radiation to allow for laser treatment of the device within the chamber.

Therefore, taking the references collectively, it would have been obvious to one of ordinary skill in the art to modify Sparks to include a laser transparent window in the chamber to allow for laser treatment of the device within the chamber. Please note that the test of obviousness is not an express suggestion of the claimed invention in any or all references, but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them (*In re Rosselet*, 146 USPQ 183).

Allowable Subject Matter

19. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art cited or reviewed by the examiner discloses providing a

reactive material comprising gallium and then subsequently enclosing the gallium with tungsten using evaporation and a shadow mask for deposition of both materials.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent 5953587 by Forrest et al discloses using an oblique angle with a mask to fully cover the reactive material (Column 3, lines 55-62, Column 6 line 62 – Column 7, line 6). US Patent 3300332 by Gorham et al, discloses it is known in the art to cover alkali metals to eliminate reactivity during processing and then remove the covering by heating (Column 6, lines 5-9, Abstract, Column 13, lines 42-52).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER